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ABSTRACT

This paper explores a number of implications arising from the combination of the New Literacy Studies and cultural-historical psychology--in particular, the concept of literacy as social practice and the psychological category of activity. Placing "social" at the center of literacy and psychological studies, these two perspectives are fruitfully combined in the service of a particular literacy learning research framework. The focus on the social in literacy practices implies a certain understanding of configurations and reconfigurations of the elements which constitute those practices (J. Gee, 2000a). Activity Theory in this respect can be used to provide a broad conceptual framework for literacy research and the learning practice design. It functions, therefore, as a powerful and clarifying descriptive tool in studies of the human trajectories in literacy learning contexts in both its comprehensiveness and its engagement with the difficult issues of consciousness, intertextual memory, intentionality, mediation, intersubjectivity, history and change. Contains 53 references and 4 figures illustrating aspects of the models. (Author/RS)

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Activity Theory and the New Literacy Studies: Modelling the Literacy Learning Activity System

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Abstract

The paper explores a number of implications arising from the combination of the New Literacy Studies and cultural-historical psychology - in particular, the concept of literacy as social practice and the psychological category of activity. Placing 'social' at the centre of literacy and psychological studies, these two perspectives are fruitfully combined in the service of a particular literacy learning research framework. The focus on the social in literacy practices implies a certain understanding of configurations and reconfigurations of the elements which constitute those practices (Gee, 2000a). Activity Theory in this respect can be used to provide a broad conceptual framework for literacy research and the learning practice design. It functions therefore as a powerful and clarifying descriptive tool in studies of the human trajectories in literacy learning contexts in both its comprehensiveness and its engagement with the difficult issues of consciousness, intertextual memory, intentionality, mediation, intersubjectivity, history and change.

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Introduction

In recent years, scholars from a number of traditions, including cultural psychology, education, sociolinguistics, and sociology, have converged on an alternative to the mainstream approach to literacy studies. This interdisciplinary movement represents a larger "'social turn' away from a focus on individual behaviour ... and individual mind and toward a focus on social and cultural interaction" (Gee 2000a: 180). In the most general terms, the sociocultural approach suggests that reading and writing, whether in first or second language, involves far more than the simple decoding of texts and information processing. Rather, it sees and studies literacy as a complex social practice learned through dialogic communication and collective practice engagement within cultural and social contexts. The work of such disparate scholars as Jerom Bruner, Mikhail Bakhtin, Brian Street, Shirley Brice Heath, Michel Foucault, Jean Lave, Anne Haas Dyson, Allan Luke, Pierre Bourdieu, James Gee, Lev Vygotsky, Michael Cole, Sylvia Scribner, and others has contributed in multiple ways to a 'quiet revolution' in literacy studies that disentangles practices of schooling from the firm grip of information processing and mental skills models of learning.

This paper describes the basic principles of Cultural-Historical Activity Theory as they apply to the New Literacy Studies, with particular emphasis on the Literacy Learning Activity System (LLAS) which provides social minds with symbols, tools, objects, and technologies for learning, dialogical interaction and meaning-making. The LLAS is an ongoing, historically constructed, object-oriented, tool-mediated, multivoiced and self-(re)organising system in which participants both reproduce and transform, internalise the culturally pregiven and create new hybrid practices, texts and identities. Rather than attempting to give a comprehensive analysis of the LLAS or to offer yet another way of literacy learning betterment, this paper tries to open vistas on the complex ecology of literacy in the New Times (Gee 2000b).

Activity Theory as a Tool of Research

Many questions Lev Vygotsky set out to address in conceptualising an alternative to behaviourism psychology are as topical today as they were some 80 years ago. In his work *Historical Meaning of the Crisis in Psychology* (1926/1982) he argues that there are two principally different, incommensurate systems of knowledge construction: one is idealist, subjective, rational, and the other is materialist, social, and dialectic. One splits thought and material world, mind and body, individual and society, while the other explains their connections. All the rest is the difference in views, schools, hypotheses and constructions; "but the conflict in reality is only between these two tendencies" (Vygotsky 1982a: 381). From this standpoint Vygotsky (1971, 1978) tries to resolve Cartesian dilemmas in psychology by using the dialectical method. He sets out to demonstrate both in theory and practical research that mind is not in opposition to the material world but is embedded in the social activities of people and is *mediated* by the material tools and cultural-semiotic artefacts that people use and historically produce in those activities.

The concept of mediation becomes the major explanatory and research tool in cultural-historical psychology. It allows the formulation of human psychology systematically and materialistically as the genetic law of cultural development (Vygotsky 1978), according to which development of higher psychological functions transpires on two planes. First, it appears interpsychologically, in interaction between people, and secondly, as an

intrapersonal category within a child. During participation in social activities with others, a child internalises the means of culture: language, funds of knowledge, cultural-technical artefacts as well as norms and modes of acting. Hence, consciousness does not exist in the heads of individuals but is constructed interpersonally in social interaction and participation in the material activities of culture.

Changes on the intrapersonal plane are due not only to operations with semiotic means but primarily to their essence - social value. That is, Vygotsky focuses on the symbolic side of material practices to explain how the system of social relationships shifts to within the child's psychological system. He comes to the conclusion that the psychological system preserves the basic feature of social interaction - its symbolic structure: " the sign and ways to use it are a functional, determining whole or focus of the entire process in a higher structure" (Vygotsky 1983: 106-107). The social ways with words get internalised and become the ways of thinking and, ultimately, acting.

However, internalisation of the social ways with words is unproblematic neither for Vygotsky nor for the members of his school. Cultural-historical psychology turns to the concept of personality to further explicate the problematic of the interaction of sign mediated activity with thinking. Because any material practice has its semiotic side, social dialogue for Vygotsky (1978: 64) is both the generator of the psychological activity and the point where the socially constructed personality is in tension with the world. On the one hand, meaning making in a social dialogue is the path from world to thought. But on the other hand, Vygotsky (1982a) states (in *Concrete Psychology of Human Being*) that this process depends on what kind of a person is thinking and interacting.

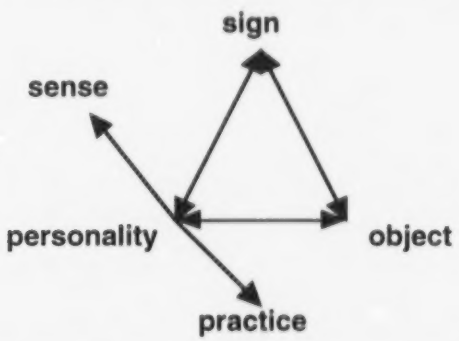

Figure 1. Vygotsky's model of mediated meaning-making.

In this respect, the process of meaning making can not be identified with either thought or sign - "word meaning [is] a unit of both generalising thought and social interchange" (Vygotsky 1982b: 16). To put it in another way, Vygotsky sees the process of meaning making as a tension between representational, abstract meaning and personal sense - meaning value (see also discussion in Wertsch 2000). This tension becomes a central part of a person's developing consciousness and changing personality (identity). Whereas societal meaning is produced historically and discursively to connect people with the reality of the objective world, personal sense connects reality with the inner world and cultural experiences of a particular social individual (Figure 1). Thus, the two sides of a sign - societal and personal sense - are differentiated to better understand how this tension may be resolved in individual utterances of communication and on the interpersonal plane of co-knowing and co-being. The interpersonal - intrapersonal tension in meaning making can be resolved in multiple ways. But, to put it in very general terms, it can lead to only two consequential semiotic actions - reproduction and transformation of meaning.

Reproduction of societal meanings through internalisation is a necessary activity of becoming a social person - in co-acting and co-knowing. Transformative practices, on the other hand, occur in the processes of externalisation (Engeström 1999a). This is the creative side of social practice. However, one very important point should be made clear: creative and transformative activity involves thinking ahead, planning and purposeful actions but this 'internal' activity is nested in the larger social practice and is already social in nature (Vygotsky 1971). It is a productive activity of historical and social individuals. Be this as it may, the internalisation/ externalisation dichotomy is nothing but an instrument in cultural-historical psychology that helps in thinking about its central issue - *social activity* - the unit of study that brings the opposition together in practical life.

Drawing on Vygotsky's emphasis that human consciousness and thinking can not be explained by studying the mind but only through the examination of human engagement in practical social activities, the Kharkov school of Activity Theory (Leont'ev, Bozhovich, Zinchenko, Zaporozhetz, Gal'perin) concentrates on the study of activity as a unit of analysis and a subject matter (Davydov 1981). Activity Theory (AT) stresses that activity is not only mediated by tools and signs but is also socially mediated. Leont'ev (1978) elaborates extensively on how consciousness, personality and meaning are always formed in the joint object-orieted activity of people. Activity theorists take great pains to study *subject* (individual and collective)-*object* relations in the complex open environment of social practices. This interaction develops within social communication in which both the construction of tools, cultural-semiotic artefacts, and their use are accountable for the emergence of human orientation, intentionality and consciousness.

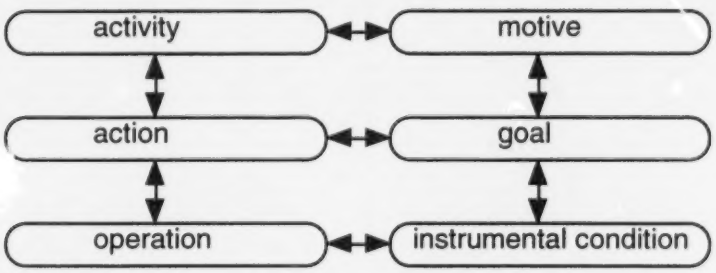

Figure 2. Leont'ev's three-level model of activity

According to AT, "activity emerges as a process of reciprocal transformation between subject and object poles" (Leont'ev 1981: 46); they are both transformed and transformative. This process is represented as a dynamic movement of subjects in activity toward the object. The object defines a specificity of an activity and its types. For instance, if the general object of the activity is a language then general types of activities may be its research, learning or teaching. The existence of this phenomenon in the real material world produces a general motive of the activity (Figure 2). At the same time the subject has a need/desire in his or her search for the object and because this need/desire is socially produced, the subject has a necessary precondition for the activity. The formation of a desire or need is already socially mediated in practices and discourses and becomes an activity motive. The general object of an activity then can be split into a field of objects such as language discourses, grammar, phonetics, sociolects, etc. if it is a research activity. The field of objects generates a field of goals and actions. Therefore, this level of activity (action-goal) is characterised by multiplicity, richness and mobility that can be ever imagined in the diverse community of language researchers. Furthermore, how

actions are performed and their type will depend on the conditions, material affordances and tasks of the immediate situation. At this level a language researcher confronts the problem not about what should be done (action) but how it should be done (operation) under particular "instrumental" condition. For instance, if the action is a transcription of a conversation then the operations might be writing, taping, video-recording or their combination. Whatever material conditions and affordances are in a particular situation the operations represent the technical side of an action if the goal of the action remains the same.

Even though AT, as it was formulated by Leont'ev and others, pays ample attention to the social relations in a collective activity, it sees this category in abstract terms (broader social relations) and does not elaborate explicitly on sociocultural diversity (Tulviste 1999) and on the fragmentation of social totality into local activity systems (Engeström 1990, 1999a). In this respect, the contemporary generation of AT tries to focus on the complex sociocultural reality of the new world in which multicultural communities, multiple perspectives and voices interact in the network of activity systems (Engeström 1987). It addresses the multi-voiced and multi-layered nature of communal activities as a source of compartmentalisation, conflict and contradiction that drive changes and transformation both within local activity systems and in the psychology of their participants (Cole 1996; Cole & Engeström 1993; Lemke 1997; Moll 1992; Nardi 1996; Wells 1999; Wertsch 1998).

In this quest, contemporary AT expands the triangular Vygotsky-Leont'ev model of the social subject's activity by introducing the institutional dimension (Figure 3). The subject becomes embedded in the local community of actors engaged in the collective practice of production and consumption of material and semiotic artefacts and resources, their exchange and distribution, as well as in the social relations within this community. To demonstrate the collective nature of human activity and the distributed nature of human cognition, social activity is defined as a *system* of collaborative human practice which includes the *object, subject, mediating artefacts, rules, community, and division of labour* (Cole & Engeström 1993).

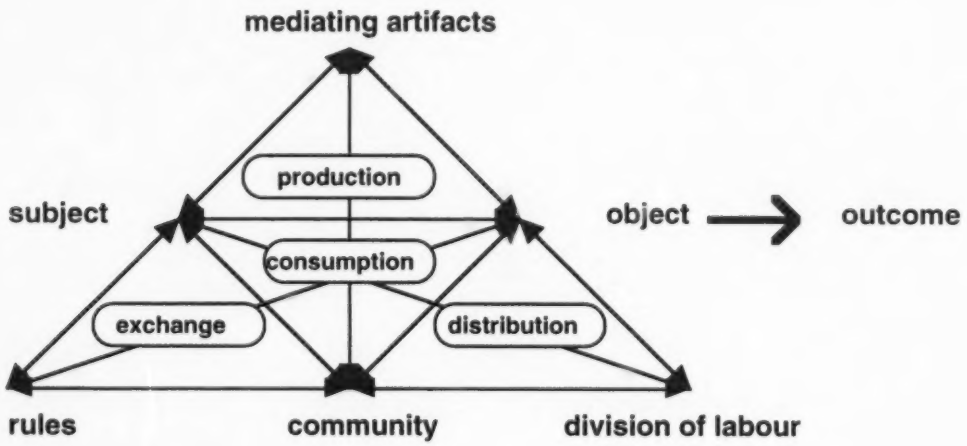

Figure 3. Model of an activity system (Engeström 1987).

Contemporary AT represents an historical-materialist method of psychological research. It focuses on the analysis of activities and practices to understand the social nature and

dynamics of cognition, motivation and learning. This historical analysis of activity systems opens vistas on the collective and individual trajectories in an activity across time and within the overall system's dynamics. Multivoicedness within an activity system combined with the interactive system's components (mediating means, material objects, social representations of norms, rules, etc.) create disequilibrium as a vehicle of movement in which cognition and learning by doing are never simply reproductive but also transformative practices. In this respect, AT is a useful analytical tool in educational research with regard to learning ecology and instructional design.

Modelling the Literacy Learning Activity System

Modelling in AT is a method of inquiry and analysis of units, defined in terms of the full set of system needed for the actual execution of the processes of inquiry (e.g. literacy learning research). How can a model be defined and what role does it play in the process of research? The most general conception of an activity system model implies the reconstruction and representation of a practical social activity which often takes the form of problem-finding and problem-definition. As a form of representation, a model is both a material and an ideal semiotic artefact that mediates research inquiry. More concretely, types of models in AT research have been defined by their practical function (Engeström 1999b):
1) conceptual tools for identifying a specific activity - *what* artefacts;
2) tools of interpretation and design - *why* and *now* artefacts;
3) means for suggesting ways of thinking about the future cultural-historic development of an activity - *where to* artefacts.

Modelling is a research process-method in which designing a model implies several stages: the first stage involves the identification of an activity as an object of an historical inquiry. The second phase involves the representation of the general structure of the activity - definition of its elements (activity actants), levels and their interactional-developmental dynamics. And in the third phase, the activity system becomes placed within the broader network of other systems to 'predict' the future directions of its development. AT, in this respect, can be used to provide a conceptual framework for literacy research and learning design, and functions as a clarifying descriptive tool in contextual studies of literacy learning.

Phase 1. A literacy learning activity as an object of an historical inquiry.

The historical meanings of a literacy learning activity have evolved from different theoretical perspectives and within political discourses in the broader society. However, it will suffice to say, following Vygotsky, that the struggle over literacy, as in any other field of inquiry, comes down to two incommensurate systems of knowledge construction: the idealist-rational account and the materialist, practice accounts. All the rest is the difference in perspectives, schools, political doctrines, power, and ideological positions. In this sense, the historical-dialectical method tries to tap directly into the essence of the literacy learning subject matter.

From the idealist perspective the essence of literacy activity becomes the *work of the mind* - cognitive skills, deep competencies and strategies. Whereas from the materialist perspective its essence can be defined as the *work of the social* - literacy in and for social practice. From the point of view of the former, literacy education is an apolitical activity directed at the acquisition and processing of information by the mind. The latter necessarily conceives literacy education at least as a cultural-ideological practice (Cole

1996; Scribner & Cole 1981; Wells 1999; Wertsch 1998; etc.) and, in more radical definitions, as a social practice in which the relations of power-knowledge, domination-subjugation, and inclusion-exclusion shape particular cultural and normative-institutional ways with words and texts (Gee 1996, 2000b; Green 1993; Freebody & Luke 1990, 1999; Lankshear 1997; etc).

Furthermore, like any activity, a social practice of literacy has its general object that can be defined in terms of knowledge(s). It historically directs the activity and motivates people's involvement in literacy learning. But because we have two differently defined essences, the external features of this object are also differently furnished. Idealists represent knowledge as a collection of abstract concepts, ideas and reified thoughts. The materialist account of knowledge places its production in the sphere of social practice. The social view of literacy, then, can not ignore contradictions in social relations and tensions between dominant and subjugated bodies of knowledge and ways of knowing.

Another Vygotskian (1978) principle of historical analysis - *history can be observed directly* - might be helpful in this phase of inquiry too. This principle aims to study not some past events but rather the present day processes as a unity of opposites in which the inherent genesis of the relation between those opposites *is* the very historical essence. Idealist representations of knowledge conceive its historical movement progressively when one representation of 'truth' is negated by another more advanced epistemological doctrine. Knowledge becomes a thing that constantly refines and re-represents itself. It is an evolutionary evolving product of the rational activity of humans. The materialist understanding of knowledge sees it in a constant tension and struggle between opposites. The essence of these contradictions is relations of power in the processes of cultural-historic production of knowledge. Hence, knowledge is not a thing in itself, a product but a process-object of human activity. It is the ideal side of material practices in which both internal and external contradictions between opposites drive the transformative intellectual activity of people.

We do not have to go deep into a historical analysis of knowledge production to find out what might be wrong with the object of literacy activity. Historical contradictions between opposites and differences can be seen in everyday, present literacy practices of local communities and in processes of learning and textual meaning-making. With this perspective in mind, we can now shift our focus on to the most manageable unit of historical analysis - the Literacy Learning Activity System.

Phase 2. Three-level model of the Literacy Learning Activity System (LLAS).

AT is deeply contextual and oriented at understanding historically specific local practices, their objects, mediating artefacts, and social organisation (Cole & Engeström 1993). In this sense, the LLAS is an ongoing, object-directed, historically and culturally constructed, semiotically-mediated practice of literacy learning in dialogical interaction with other participants. As a system of meaning making, the LLAS has its own specificity. It consumes the textual representation of knowledge, distributes the participation of students in an ongoing activity of meaning making, exchanges meanings in a dialogical mode and produces new meanings, texts, patterns of practice and identities as well as reproducing the old ones.

The LLAS is a self-organising system in which contradictions and tensions between people, activity and semiotic artefacts are the driving belts of its dynamic change. To explicate dynamic processes and contradictions in the LLAS, we have to analyse its

structural components and its active state of transformation. Hence, we need to see it on the three levels of activity-action-operation (Leont'ev 1978) to understand its specificity (Figure 2).

1. The level of activity-motive in literacy learning. This level of the LLAS modelling tries to address the question of why people become engaged (or not engaged) in a literacy learning activity. It is used to represent the most general unit of the LLAS analysis - literacy activity on the nexus of semiotic consumption-production-outcome.

The semiotic consumption of literacy practice representations constitutes the central mechanism of meaning making and exchange of the LLAS in educational settings. Its analysis helps to identify processes and means by which classroom community and particular individuals are acted upon from the outside. In this respect, both the general object of the LLAS and its community are shaped socially and historically within the broader social network through representations of knowledge, cultural politics, educational policies, and local institutional contexts within which a classroom community operates as an activity system. The consumption of textual representations and discourses from the outside produces a desire-motive of collective activity directed at the leading object - a particular body of knowledge.

On the level of activity-motive, the collective subject of learners appears retrospectively as an already imagined community (Anderson 1991). The learners become "motivated" by the forces from the "outside" which define the value of knowledge and literacy activity. In this regard, the retrospective motivation for literacy learning is the result of the work of powerful discourses and practices that define what counts as knowledge and literacy. Social constructions of the institutional literacy learning activity and of its major components are materialised in texts that become organisational tools for this activity system. They not only structure the learning activity but also provide the ideological basis for the semiotic centre of the activity. This centre consumes and translates texts and people that come from the outside (Lotman 1990) to participate in the LLAS. The sphere of consumption influences then semiotic production, distribution and exchange within the LLAS.

On the other hand, the central tenet of AT is the active, albeit decentered, historical subject who is engaged in productive and transformative activity. While representations of the official discourses will be consumed and reproduced within a classroom community, some students, "whose local and cultural knowledge are often displaced", will produce counter discourses (Gutierrez & Stone 2000: 156). This process can be explained at this level by the contradictory nature of knowledge as a general object that drives the LLAS. Knowledge from the sociocultural perspective is an intersystemic or boundary object (Star & Greisemer 1989) and, if we re-imagine classroom community as a multicultural and heterosocial unit, then we can see the internal contradiction within activity object also externally - as tensions in classroom practices and dialogues. Students as historical subjects come to a classroom community from multiple social and cultural groups that also produce knowledges or funds of knowledge (Moll 2000). Hence, knowledge as the object of literacy learning is the point of intersection of multiple sociocultural practices. It is their boundary object that is used by more than one distinct group and provides some degree of translation between sociocultural groups.

Owing to these internal contradiction, the formation of a general motive for the learning activity transpires not unproblematically but in the dialogical space of negotiation in which consciousness is formed "*alongside* other consciousness... [I]t cannot concentrate on itself and its own idea, on the immanent logical development of that idea; instead, it is pulled into interaction with other consciousnesses...; it is accompanied by a continual

sideways glance at another person" (Bakhtin 1984: 32). A conscious motive for the literacy activity appears in the contradictory struggle between the historical-political value of the activity object which shapes the general need and the local-contextual formation of a motive in face-to-face classroom interactions. In the sphere of dialogical inter-action and meaning production the privileged representation of knowledge still drives the general activity of (be)coming literate. But this sphere also induces motivational changes and transformations due to the internal properties of the object - tension between multiple knowledges and epistemological differences.

In this contradiction between consumption and production, the "educational process discloses itself as a complicated struggle in which thousands of highly developed and heterogeneous forces join battle" (Vygotsky 1997: 54). Whereas the central mechanism of an activity tends to a single understanding of knowledge and meaning, multiple perspectives and heterogeneous cultural experiences that are brought to the local classroom activity contribute to its decentering. Heteroglossia resists the complete semiotic closure that the institutional literacy activity system tends to construct and reproduce. This tension within the external activity of classroom meaning making becomes a vehicle of both (re)productive and transformative learning and has been coined by Leont'ev (1978) as 'appropriation'. It implies a great deal of change, contingency, transformation, and resistance. Thus, the essential nature of the LLAS is a transformative appropriation of literacy and knowledge rather than its assimilative acquisition. The LLAS, in this sense, is a knowledge producing (constructing) system that reworks officially constructed object-knowledge and transforms it into an outcome (Figure 4). That is, the epistemological outcome manifests the intentional, purposeful, and pragmatic resolution of the contradictions between official discourses and their mediation on the LLAS and counter-discourses of the multicultural classroom community.

To this end, the level of object-activity-motive calls the attention of researchers in instructional and learning environment design to such components of the LLAS as the general object-knowledge, the means of its mediated construction and the sociocultural composition of the classroom community. In particular, it draws attention to technologies and discourses that produce values and representations of what counts as knowledge and literacy. Whereas the technologies and discourses mediate social reproduction, active meaning making within the LLAS has a transformative potential. Transformative activity in AT is understood not as external changes of the object but as changes of its internal essence (Davydov 1999). This is the law of development and self-(re)organisation of activity system itself.

2. The level of actions-goals-field of goals. On the level of collective or individual actions the field of goals can be defined through the participants' object orientation toward *what* is offered and made available for reading and writing in a classroom community and what is excluded. In other words, the field of material semiotic objects (texts, graphs, images, etc.) defines the psychological goals as well as the certain type(s) of literate actions. This is a dynamic process in which managing primary artefacts such as texts is the initial general objective of the activity system participants. Texts as objects of practical reading actions become texts as mediating resources. They come to mediate the general activity of meaning-making and undergo "the strange reversal of object and instrument" (Engeström 1987: 101). First, they take the role of an object-goal and then they function as mediating resources for the production of modified texts and meanings, orally or in a written form (see the concepts of designing and the re-designed in New London Group 2000).

In this transformation, the use of mediating resources shapes the ways students think and act. Gee, Hull, & Lankshear (1996: 3) explain it as follows:

> ... We can never extract just the bits concerning reading (or 'literacy' in any other sense) and ignore all the bits concerned with talk, action, interaction, attitudes, values, objects, tools, and spaces. All the bits - the print bits and the non-print bits - constitute an integral whole.

In other words, texts as objects of action and mediating resources are never just specifically structured print forms. They carry with them "lived, talked, enacted, value-and-belief-laden practices" (ibid.) and in this understanding form and transform types of literate actions on the basis of their enacted potential for meanings. This characteristic of semiotic resources presents a source of tension in the collaborative and individual modes of meaning making.

The contradiction between the LLAS participants' beliefs, values, previous meaning-making experiences with texts and restricted, ideologically laden semiotic resources in the classroom create a unique field of multiple action-goals. Any LLAS participant incorporates in his or her action multiple texts (Smagorinsky & O' Donell-Allen 2000). Context specific actions in dealing with the text are connected intertextually to other texts and ways of being. Literate events in which specific emphasis is given to only certain types of reading actions such as decoding and structural-pragmatic are often in tension with the readers' intertextual history and diverse ways of being in the world. Corrective interventions of a teacher or other peers may guide reading actions to a certain central understanding of a text that becomes a common object-goal of collaborative inquiry. However, this does not mean that the overriding goal can not be disrupted. By drawing on multimodal semiotic resources (Kress 2000) and intertextual experiences (Fairclough 2000), the readers bring their multiple goals and the way of being in the world to the collective action of meaning making.

Meaning negotiation in the LLAS transpires in the contexts of power relations - vertical and horizontal division of power and status within the community (Engeström 1999a). In the traditional LLAS the teacher, as a more powerful member of the community, orchestrates literate actions in a way that leads a diverse community of learners to certain meanings and common sense. Asymmetrical power relations produce the conceptions of texts "as though they have 'explicit' and socially invariable meanings all by themselves, sitting there on the page, quite apart from experiences one has actually had" (Gee et al 1996 : 4). In a similar vein, Leont'ev (1978: 64) argues that "a more intense analysis of such reshaping of personal meaning into adequate (more adequate) meanings indicates that it takes place under conditions of the struggle in society for consciousness of people". Thus, division of power and status in the LLAS (re)shapes the goal-directed actions of students in such a way that some types of reading actions become more adequate than others. Negotiation in actions of meaning making, then, are socially constrained and are nested within the normative patterning of classroom activity.

Furthermore, when meaning making actions are rigidly mandated from the top down, negotiation of meaning in general becomes hardly possible (Wells 1999). On the other hand, in a more horizontal organisation of literacy learning the contestation of meaning transpires intersubjectively in connections and active engagement with the diverse social perspectives (Gutierrez & Stone 2000). Meaning making actions in a dialogue are oriented toward another person and her social position. In this contradictory and simultaneous process of self-other inter-action, "if the individual is forced ... to make a choice, then that choice is not between meanings but between colliding social positions

that are expressed and recognised through these meanings" (Leont'ev 1978: 64). Relativity of social positions and positionings becomes the source of actional-semiotic ambiguity. But the inter-actional tension can be unravelled partially and strategically in pragmatic negotiation (Laclau 1996) on the interpersonal and intrapersonal levels of decision and meaning making actions.

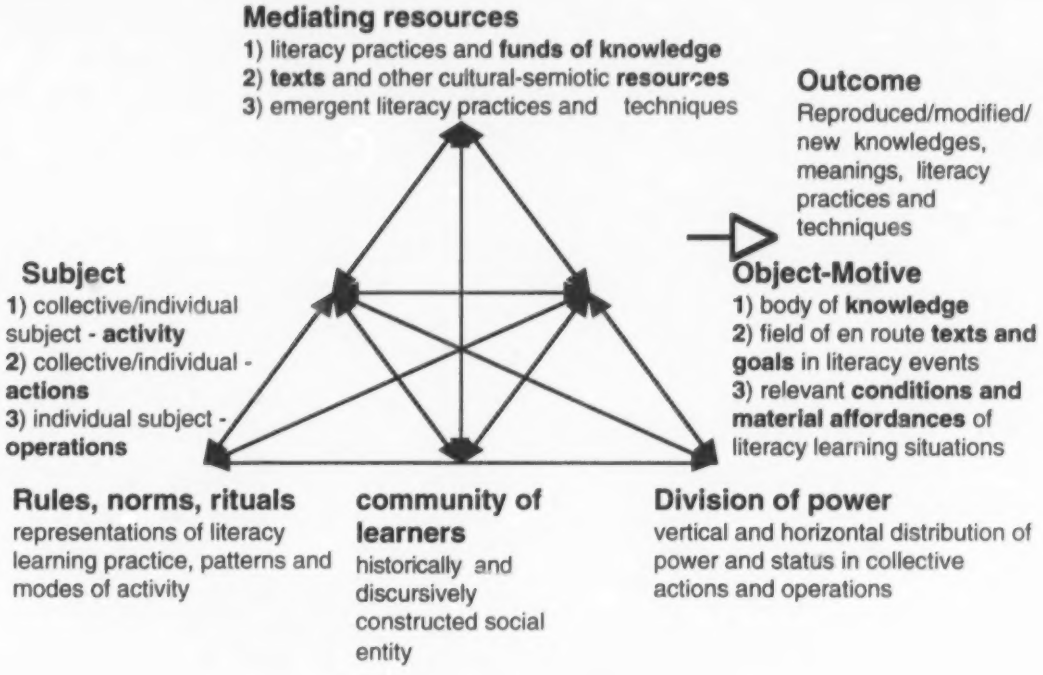
Mediating resources
1) literacy practices and funds of knowledge
2) texts and other cultural-semiotic resources
3) emergent literacy practices and techniques
Outcome
Reproduced/modified/ new knowledges, meanings, literacy practices and techniques
Subject
1) collective/individual subject - activity
2) collective/individual - actions
3) individual subject - operations
Object-Motive
1) body of knowledge
2) field of en route texts and goals in literacy events
3) relevant conditions and material affordances of literacy learning situations
Rules, norms, rituals
representations of literacy learning practice, patterns and modes of activity
community of learners
historically and discursively constructed social entity
Division of power
vertical and horizontal distribution of power and status in collective actions and operations

Figure 4. Three-level expanded model of the LLAS.

Despite the multiplicity of actions-goals in the LLAS, it is still possible to classify them according to their essential characteristics into types. The formation of action types is defined by the field of goals which are developed as the ways of participants' task performance in dealing with texts. Readers perform four essential tasks and agentive roles in a text-based activity - code breaker, meaning maker, text user, and text critic (Freebody & Luke 1999). With an emphasis on actions rather than on roles, the textual actions can be defined then as coding, semantic-structural, pragmatic, and critical-analytic types. These action types should be thought of as an integrated whole on the level of activity. They get analytically separated as recognisable types to emphasise different foci (goals) in the particular moment of the reading actions sequencing. These goals may shift as the superordinate action may require a number of subordinate actions. For example, meaning-making action implies code-breaking action, and text-using pragmatic action implies both coding and semantic-structural actions, etc. In this respect, this is not a hierarchical sequence but a very dynamic change of reading action types on the time scale. That is, all four types can be experienced by the reader/writer as he/she participates in the social activity of learning.

However, the critical-analytic type of reading requires specific material affordances and social conditions within the LLAS. It needs the introduction of alternatives to the

dominant semiotic resources (texts and discourses that revive and mobilise subjugated knowledges) and the practice patterns of more symmetrical activity organisation. This is not to say that the LLAS depends entirely on external intervention for development of the full scope of reading action. Rather, it is to emphasise that the critical reading action type develops *within* the LLAS and has multiple goals, perspectives, and orientations due to the texts and discourses that are brought from other cultural systems. But in order not to suppress its internal transformative potential, the LLAS needs transformative and critical pedagogies in which "teachers and students (leadership and people), co-intent on reality, are both Subjects, not only in the task of unveiling that reality, and therefore by coming to know it critically, but in the task of re-creating that knowledge" (Freire 1970 : 51). In other words, the critical action type in literacy learning, if combined with critical teaching, can change the internal essence of the general object of activity - knowledge - and lead to the replacement of the old LLAS by a new one.

3. The operational level. On the level of operations-conditions some actions can be automated and performed unconsciously. This concerns in the first instance the repeated and subordinate actions of coding, textual-structuration, and competency with regard to the language system (Green 1988). The 'technology of script' (Freebody 1992) is learned consciously for performing specific literacy tasks effectively but participation in literacy events is much more than just 'cracking the code' (Freebody & Luke 1999). It involves the use of other textual resources, knowledge of social fields and power relations to (re)construct meanings. Hence, operations such as coding, code-breaking, sound-symbol matching and other operations of adequate handling of language system are actions when they are first learned. They require conscious effort to master the language aspect of literacy (Green 1988). As soon as they become repeatable in practices and get internalised, these action types turn into unconscious operations - "automated or mechanised psychological processes" (Vygotsky 1978: 64). Coding, decoding and other reading operations themselves constitute repeatable, unconscious patterns of practice and are incorporated into the conscious action of meaning making and critical-analytic types. However, operations can be disrupted and become actions again.

Operations are as important in the activity of literacy as conscious actions. How they are utilised in a reading task depends on the immediate conditions and the quality of material affordances. As Leont'ev (1981 : 61) points out, there are many means of travelling from A to N, but what means are available (or not available) defines how the action can be done. Hence, the operational level is a 'technological basis' for actions. The available tools and technologies of literacy (print texts, visual images, computers) in a classroom influence and constrain the actional level of meaning making. More often than not, material affordances for action are situated and employed within the traditional LLAS so that they permit certain actions of meaning production and constrain others. In limiting material conditions literacy learning is necessarily in tension with the reality of the New Times. On the one hand, print technology selectively provides means for reading. Either they are texts or images or combinations of both, they restrict the execution of textual actions to specific representations that may exclude the sociocultural diversity of the classroom community. On the other hand, print technology is constrained in itself. That is, in Freebody's (1992: 50) words, successful engagement with the technology of the written script is a necessary component of successful reading but not a sufficient one. Any LLAS operates in the information society in which access to the variety of literacy means equate with access to literacy in general.

Phase 3. 'Prediction' of the LLAS development.

The impetus to change the system arises from internal tensions in each constituent component of the literacy learning activity (e.g. the multicultural classroom community) and between the constituent components (e.g. between a particular reader and a particular text). However, any LLAS is nested within the broader network of neighbouring systems that interpenetrate it in multiple ways. For example, it closely interacts with the institutional administrative system, activity systems of communities the members of the LLAS come from, systems that produce education policies, texts and other semiotic materials for school, educational research systems, etc. Modelling the internal dynamics of the LLAS, then, is impossible without accounting for the complex contradictions between the neighbouring activity systems (Engestrom et al. 1999).

Contradictions between neighbouring systems may transpire when one LLAS is networked to a more advanced LLAS (e.g. to innovative literacy learning classrooms) or when the LLAS is in tension with another neighbouring system (e.g. the LLAS and the school administration). In any case, activity as a system is not a homogenous, fossilised structure but, rather, is a dynamic system which contains the historical sediments of earlier practices as well as the emergent, future types of learning and teaching practices. The transformative dynamics of a particular LLAS may shed light on how its development might occur only in general terms. In the particular local LLAS, there is a great deal of contingency, hybridisation, strategic decision making and meaning redesign.

To conclude, all types of tensions and contradictions involve moral, political, and cultural decisions about the kinds of literacy learning activity needed to enhance classroom communities and the life trajectories of their members, their cultural-semiotic resources and literacy technologies, patterns of learning organisation and division of power and status. The LLAS is, then, an activity system that needs both construction and re-imagining of contemporary sociocultural conditions and of the current trends in cultural politics, educational policies, literacy and information technology research. If modelling and designing literacy learning environments from the cultural-historic AT perspective problematises school-effectiveness and management, it also suggests some directions to continue the transformative activity of changing textual, cultural and epistemological politics, both within the broader network and in the local systems of literacy learning.

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